What is claimed is:

1. A cable modem termination system (CMTS), comprising:

two or more primary CMTS transceivers, each for transceiving communications through a primary signal path;

a plurality of directional couplers connected to the primary CMTS transceivers in the primary signal path; and

one backup CMTS transceiver selectively connected to the plurality of directional couplers outside of the primary signal path.

2. The CMTS of claim 1, further comprising a switch module connected between the backup CMTS transceiver and the primary CMTS transceivers for selectively connecting the backup CMTS transceiver to the plurality of directional couplers.

3. The CMTS of claim 2, wherein the backup and primary CMTS transceivers each further comprise one or more upstream communication ports and one or more downstream communication ports, wherein each communication port of the primary CMTS transceivers is connected to one of the plurality of directional couplers, wherein the switch module further comprises an upstream switch module associated with each upstream communication port of the backup CMTS transceiver for selectively connecting that upstream communication port to a directional coupler associated with a corresponding upstream communication port of one of the primary CMTS transceivers, and wherein the switch module further comprises a downstream switch module associated with each downstream communication port of the backup CMTS transceiver for selectively connecting that downstream communication port to a directional coupler associated with a corresponding downstream communication port of one of the primary CMTS transceivers.

4. The CMTS of claim 3, wherein each switch module further comprises an amplifier connected between its associated communication port of the backup CMTS transceiver and the associated communication ports of the primary CMTS transceivers.

5. The CMTS of claim 4, wherein each switch module further comprises RF level correction circuitry.

6. The CMTS of claim 3, further comprising:
a plurality of first additional directional couplers, with one first additional directional coupler connected between a pilot tone generator and each directional coupler of the plurality of directional couplers associated with an upstream communication port of a primary CMTS transceiver.

7. The CMTS of claim 6, further comprising:
a plurality of second additional directional couplers, with one second additional directional coupler connected between an RF detector and each directional coupler of the plurality of directional couplers associated with a downstream communication port of a primary CMTS transceiver.

8. A redundancy system for a cable modem termination system (CMTS), comprising:
a first directional coupler comprising a first port for connecting to a communication line, a second port connected to a first CMTS transceiver for transceiving communications on the communication line in a first operation mode and a third port selectively connected to a backup CMTS transceiver for transceiving communication on the communication line in a second operation mode.

9. The redundancy system of claim 8, wherein the first directional coupler further comprises a fourth port and wherein the fourth port is resistance terminated.

10. The redundancy system of claim 8, wherein the first directional coupler is configured to have relatively low loss in a first signal path between the communication line and the first CMTS transceiver and to have relatively high loss in a second signal path between the communication line and the second CMTS transceiver.

11. The redundancy system of claim 10, wherein the first directional coupler is configured to exhibit approximately -1.5dB in a downstream direction of the first signal path, approximately -1.5dB in an upstream direction of the first signal path, approximately -10dB in the downstream direction of a second signal path, and approximately -10dB in the upstream direction of the second signal path.

12. The redundancy system of claim 8, further comprising a switch module connected between the second CMTS transceiver and the first directional coupler for selectively connecting the second CMTS transceiver to the third port of the first directional coupler or to a third port of another first directional coupler connected to another CMTS transceiver.

13. The redundancy system of claim 12, further comprising an amplifier connected between the switch module and the second CMTS transceiver for amplifying the communication between the second CMTS transceiver and the first directional coupler when in the second operation mode.

14. The redundancy system of claim 13, further comprising a second directional coupler connected between the amplifier and the first directional coupler and comprising a first port selectively connected to the amplifier through the switch module, a second port connected to the third port of the first directional coupler, and a third port connected to an RF detector.

15. The redundancy system of claim 13, further comprising a second directional coupler connected between the amplifier and the first directional coupler and comprising a first port selectively connected to the amplifier through the switch module, a second port connected to the third port of the first directional coupler, and a third port connected to a pilot tone generator.

16. A cable modem termination system (CMTS), comprising:

at least one primary CMTS transceiver, each primary CMTS transceiver comprising one or more upstream communication ports for communication with subscriber equipment and one or more downstream communication ports for communication with a head end;

at least one backup CMTS transceiver, each backup CMTS transceiver comprising one or more upstream communication ports for communication with the subscriber equipment and one or more downstream communication ports for communication with the head end; and

a plurality of directional couplers, with a directional coupler connected to each communication port of the primary CMTS transceivers;

wherein each communication port of a backup CMTS transceiver is selectively connected to a directional coupler of a corresponding communication port of at least one primary CMTS transceiver.

17. The CMTS of claim 16, further comprising one backup CMTS transceiver and a plurality of primary CMTS transceivers.

18. The CMTS of claim 17, wherein the plurality of primary CMTS transceivers comprises between six and ten primary CMTS transceivers.

19. The CMTS of claim 16, wherein each directional coupler is configured to have relatively low loss in a first signal path for communication with a communication port of a primary CMTS transceiver and to have relatively high loss in a second

signal path for communication with a communication port of a backup CMTS transceiver.

20. The CMTS of claim 19, wherein the first signal path is across a first and second port of each directional coupler and wherein the second signal path is across the first and a third port of each directional coupler.

21. The CMTS of claim 20, wherein the second port of each directional coupler is opposite the first port of that directional coupler and wherein a fourth port of each directional coupler is resistance terminated.

22. The CMTS of claim 19, wherein each directional coupler is configured to exhibit approximately -1.5dB in a downstream direction of the first signal path, approximately -1.5dB in an upstream direction of the first signal path, approximately -10dB in the downstream direction of a second signal path, and approximately -10dB in the upstream direction of the second signal path.

23. The CMTS of claim 17, further comprising a switch module connected between the backup CMTS transceiver and the primary CMTS transceivers for selectively connecting the backup CMTS transceiver to the plurality of directional couplers.

24. The CMTS of claim 23, wherein the switch module further comprises an upstream switch module associated with each upstream communication port of the backup CMTS transceiver for selectively connecting that upstream communication port to a directional coupler associated with a corresponding upstream communication port of one of the primary CMTS transceivers, and wherein the switch module further comprises a downstream switch module associated with each downstream communication port of the backup CMTS transceiver for selectively connecting that downstream communication port to a directional coupler associated with a

corresponding downstream communication port of one of the primary CMTS transceivers.

25. The CMTS of claim 24, wherein each switch module further comprises an amplifier connected between its associated communication port of the backup CMTS transceiver and the associated communication ports of the primary CMTS transceivers.

26. The CMTS of claim 24, wherein each upstream switch module further comprises an amplifier connected between its associated upstream communication port of the backup CMTS transceiver and the associated upstream communication ports of the primary CMTS transceivers, and a switching matrix interposed between the associated upstream communication ports of the primary CMTS transceivers and the amplifier.

27. The CMTS of claim 26, further comprising a plurality of additional directional couplers connected to a signal path between the associated upstream communication ports of the primary CMTS transceivers and the switching matrix, wherein the plurality of additional directional couplers are further connected to a pilot tone generator.

28. The CMTS of claim 24, wherein each downstream switch module further comprises an amplifier connected between its associated downstream communication port of the backup CMTS transceiver and the associated downstream communication ports of the primary CMTS transceivers, and a switching matrix interposed between the associated downstream communication ports of the primary CMTS transceivers and the amplifier.

29. The CMTS of claim 28, further comprising a plurality of additional directional couplers connected to a signal path between the associated downstream

communication ports of the primary CMTS transceivers and the switching matrix, wherein the plurality of additional directional couplers are further connected to an RF level detector.

30. The CMTS of claim 24, wherein each switch module further comprises RF level correction circuitry.

31. A method of providing redundancy in a cable modem termination system (CMTS), comprising:

passing communications through a directional coupler to a primary CMTS transceiver during a first operation mode; and

passing the communications through the directional coupler to a backup CMTS transceiver during a second operation mode.

32. The method of claim 31, further comprising:

testing the backup CMTS transceiver during the first operation mode without disturbing the communications.

33. The method of claim 32, further comprising:

testing the backup CMTS transceiver during the first operation mode without removing the backup CMTS transceiver from the CMTS.

34. The method of claim 31, further comprising:

entering the second operation mode upon detecting a failure of the primary CMTS transceiver.

35. A method of operating a cable modem termination system (CMTS), comprising:

communicating with one or more primary CMTS transceivers across a primary signal path during a first operation mode, wherein each primary CMTS transceiver has one or more upstream communication ports for

communication with subscriber equipment and one or more downstream communication ports for communication with a head end, and wherein a directional coupler is connected between each upstream communication port and the subscriber equipment and between each downstream communication port and the head end;

detecting a failure of one of the primary CMTS transceivers; and

entering a second operation mode wherein communication with the failed primary CMTS transceiver is routed through a backup CMTS transceiver through the directional couplers associated with the failed primary CMTS transceiver.

36. The method of claim 35, further comprising:

amplifying the communication through the backup CMTS transceiver during the second operation mode.

37. The method of claim 36, wherein the communication through the backup CMTS transceiver is amplified to compensate for losses through the directional coupler to create a signal with near unity gain.

38. The method of claim 37, further comprising:

detecting a signal level of the communication through the backup CMTS transceiver; and

adjusting the amplification based on the detected signal level to create the signal with near unity gain.

39. The method of claim 35, further comprising:

testing the backup CMTS transceiver during the first operation mode without disturbing the communications with the primary CMTS transceivers.

40. The method of claim 39, further comprising:

testing the backup CMTS transceiver during the first operation mode without removing the backup CMTS transceiver from the CMTS.